

CLAIMS

1. A backlight unit operable to illuminate the target with fluorescent lamps, the backlight unit comprising
5 brightness compensation means adapted to compensate for uneven brightness in the longitudinal direction of the fluorescent lamps.
2. The backlight unit of claim 1 comprising a
10 reflection portion adapted to emit the light from the fluorescent lamps in a specific direction, wherein the brightness compensation means are provided on the reflection unit and control the reflectance of the reflection portion to compensate for uneven brightness
15 in the longitudinal direction of the fluorescent lamps.
3. The backlight unit of claim 2, wherein the brightness compensation means have regions with relatively high and low reflectances in the reflection
20 portion and take advantage of the difference in reflectance to compensate for uneven brightness in the longitudinal direction of the fluorescent lamps.
4. The backlight unit of claim 3, wherein the
25 brightness compensation means have a reflectance gradient that causes the reflectance of the reflection portion to decline gradually or in stages and take

advantage of the reflectance gradient to reduce the brightness of the portion with a relatively high brightness in the longitudinal direction of the fluorescent lamps.

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5. The backlight unit of claim 3 or 4, wherein the brightness compensation means have a reflectance gradient that causes the reflectance of the reflection portion to increase gradually or in stages and take
10 advantage of the reflectance gradient to increase the brightness of the portion with a relatively low brightness in the longitudinal direction of the fluorescent lamps.

15 6. The backlight unit of any one of claims 2 to 5, wherein the brightness compensation means are a dot pattern provided on the reflection portion and take advantage of the dot pattern to control the reflectance of the reflection portion.

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7. The backlight unit of claim 6, wherein the reflectance of the reflection portion provided with the dot pattern is controlled by one or a plurality of the reflectance of the group of small dots making up the
25 dot pattern, the dot density, the dot shape, and the dot color.

8. The backlight unit of claim 1 comprising a reflection portion adapted to emit the light from the fluorescent lamps in a specific direction, wherein the reflection portion is made up of first and second
5 reflection layers having given optical reflectance and transmittance levels, wherein the reflection portion is configured with a first region having the first and second reflection layers stacked one above another in the direction of incidence of light and a second region
10 made up only of the first reflection layer, and wherein the reflectance of the reflection portion is controlled using the first region with a relatively high reflectance and the second region with a reflectance lower than that of the first region.

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9. The backlight unit of claim 1, wherein the brightness compensation means are provided on a glass tube of the fluorescent lamps and control the transmittance of the glass tube to compensate for uneven
20 brightness in the longitudinal direction of the fluorescent lamps.

10. The backlight unit of claim 1 comprising a diffusion portion adapted to diffuse the light from the fluorescent
25 lamps, wherein the brightness compensation means are provided on the diffusion portion and control the transmittance of the diffusion portion to compensate

for uneven brightness in the longitudinal direction of the fluorescent lamps.

11. The backlight unit of claim 9 or 10, wherein the
5 brightness compensation means have regions with relatively high and low transmittances in the glass tube or the diffusion portion and take advantage of the difference in the transmittance to compensate for uneven brightness in the longitudinal direction of the
10 fluorescent lamps.

12. The backlight unit of claim 11, wherein the brightness compensation means have a transmittance gradient that causes the transmittance to decline
15 gradually or in stages and take advantage of the transmittance gradient to reduce the brightness of the portion with a relatively high brightness in the longitudinal direction of the fluorescent lamps.

20 13. The backlight unit of claim 11 or 12, wherein the brightness compensation means have a transmittance gradient that causes the transmittance to increase gradually or in stages and take advantage of the transmittance gradient to increase the brightness of
25 the portion with a relatively low brightness in the longitudinal direction of the fluorescent lamps.

14. The backlight unit of any one of claims 9 to 13,
wherein the brightness compensation means are a dot
pattern provided on the glass tube of the fluorescent
lamps or the diffusion portion and take advantage of
5 the dot pattern to control the transmittance.

15. The backlight unit of claim 14, wherein the
transmittance of the glass tube or the diffusion portion
provided with the dot pattern is controlled by one or
10 a plurality of the reflectance of the group of small
dots making up the dot pattern, the dot density, the
dot shape, and the dot color.

16. The backlight unit of claim 1, wherein the
15 brightness compensation means are provided on the glass
tube of the fluorescent lamps and control the tube surface
brightness of the glass tube to compensate for uneven
brightness in the longitudinal direction of the
fluorescent lamps.

20 17. The backlight unit of claim 16, wherein the
thickness of the fluorescent substance formed inside
the glass tube of the fluorescent lamps as the brightness
compensation means is changed correspondingly with the
25 longitudinal position of the fluorescent lamps to
compensate for uneven brightness in the longitudinal
direction of the fluorescent lamps.

18. A liquid crystal display device comprising the backlight unit of any one of claims 1 to 17 and a liquid crystal panel illuminated by the backlight unit.

5 19. A liquid crystal display device operable to apply an illumination light from a backlight unit having fluorescent lamps to a liquid crystal panel to display images, the liquid crystal display device comprising brightness compensation means adapted to compensate for
10 uneven brightness in the longitudinal direction of the fluorescent lamps.

20. The liquid crystal display device of claim 19, wherein the brightness compensation means have a
15 gradation conversion portion operable to carry out a given gradation conversion process of input image data and a control portion operable to switch between gradation conversion characteristics of the gradation conversion portion based on a synchronizing signal of
20 the input image data, and wherein the control portion switches from one gradation conversion characteristic to another in the gradation conversion portion based on the screen position to display the image data to compensate for uneven brightness in the longitudinal
25 direction of the fluorescent lamps.

21. The liquid crystal display device of claim 19,

wherein the liquid crystal panel is configured to have,
as the brightness compensation means, an aperture ratio
that changes correspondingly with the display screen
position, and wherein the aperture ratio is changed to
5 compensate for uneven brightness in the longitudinal
direction of the fluorescent lamps.